



Non-Government Standards and How to Exploit Them

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Outline

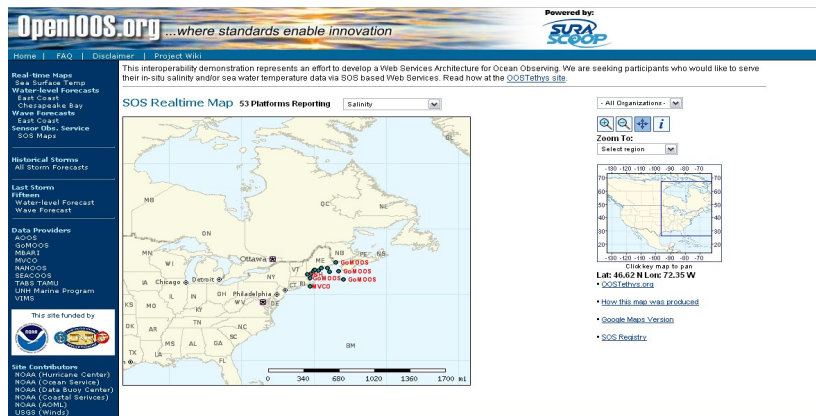


- OGC
- 2008 Work Plan
- Focus Areas
- What is Empire Challenge
- Example of OGC specs in Empire Challenge 2007
- Empire Challenge 2008 Key Dates
- OGC Pilot Status

The OGC Mission



To serve as the global forum for the collaboration of developers and users of geospatial content and services, and **to develop international standards** for geospatial interoperability.



**Real time access to OOS
sensor data via OGC
standards**

OGC CityGML Urban Model of Berlin

Source: www.3d-stadtmodell-berlin.de



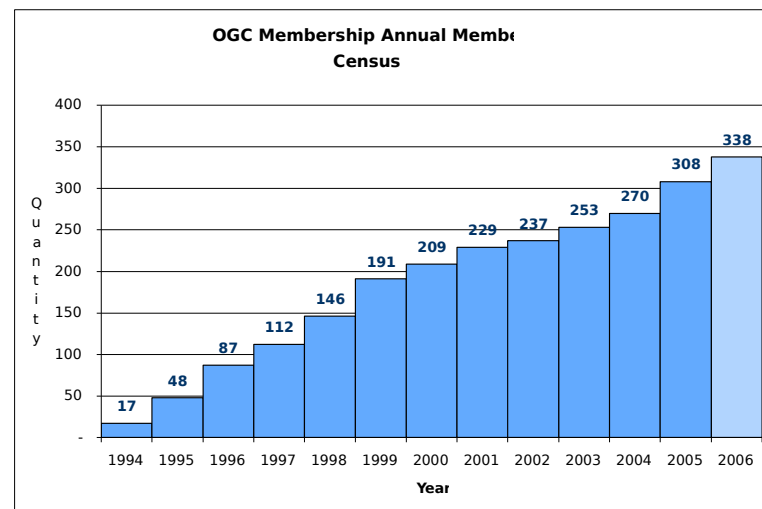
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Helping the World to Communicate Geographically

OGC - Quick Background



- 345 member organizations from 34 countries & 6 continents
 - 158 North America
 - 146 Europe
 - 40 Asia-Pacific
 - 2 Africa
 - 1 South America
 - 4 Middle East
- 24 approved, publicly available Implementation standards
- Hundreds of product implementations
- Growing base of policy requiring OGC (EU INSPIRE, NGA, NATO C3 Architecture, GEOSS and others)
- Increasing level of joint activities with other standards organizations



OGC-based Policy Positions



- UK Ordnance Survey using GML format to distribute its MasterMap product
- Canada Geospatial Data Infrastructure (CGDI) Implements OGC Web Service Specifications
- CIA and DHS have adopted OGC as part of their Geospatial Enterprise Architectures.
- Australian SDI recognizes OGC standards, numerous enterprise implementations across the nation
- European Union INSPIRE technical architecture built around OGC specifications
- Open Location Services (mobile wireless) being built into consumer offerings from major location services vendors

Still Other OGC Policy Positions

- National Geospatial-Intelligence Agency
- NATO C3
- Federal Enterprise Architecture
- Group on Earth Observations
- DISR

Federal Enterprise Architecture

Geospatial Profile

Version 1.1



Architecture and Infrastructure Committee,
Federal Chief Information Officers Council
and
Federal Geographic Data Committee
January 27, 2006



NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY
400 SANDHURST ROAD
BETHESDA, MARYLAND 20814-5050

NEWS RELEASE

Public Affairs Office

December 21, 2005 Contact: Stephen Hinkle, 301-227-2077, Stephen.Hinkle@nga.mil
Release Number: 05-18 Status: Final, 301-227-2132, Press.Officer@nga.mil

NGA Announces Requirement for OGC and Complementary Standards

BETHESDA, Md. — The National Geospatial-Intelligence Agency (NGA) has adopted the Open Geospatial Consortium, Inc. (OGC) web service specification standard, along with complementary international and industry standards, as requirements for use in all NGA production processes. These standards have been inserted into the OGC Information Technology Standards Registry (ITSR). Additionally, a new National System for Geospatial-Intelligence (NSGI) OGC/OGC Standards Directive will be published in 2006. It will require the standard OGC/OGC standards be used to develop and expand the NSGI.

The NSGI is the integration of technology, policies, capabilities, and doctrine necessary to conduct geospatial intelligence in a multi-intelligence environment.

"NGA has had a decade-long commitment to the development of standards that will allow OGC/OGC operations and analysis to consistently collaborate in the emerging (Geo)Context-Dependent of Defense environment," said Lt. Gen. James B. Chapoy, Jr., USAF (Ret), NGA Director and functional manager for the NSGI. He added, "The adoption of specific OGC/OGC standards is an historic step and a strong move in the right direction to expand and improve the NSGI."

NGA's National Center for Geospatial Intelligence Standards (NCGIS) coordinates the efforts of a Geospatial Intelligence Standards Working Group (OWG). The OWG has members from throughout the NSGI community and focuses on consensus for various standards among the members.

The OWG, after a year of concentrated effort, recently approved the entire OGC Spatial Data Infrastructure 1.0 (SDI 1.0) specification baseline. This baseline includes OpenGIS Web Map Service (and Style Layer Exception), Web Feature Service (and Geography Markup Language), Web Coverage Service, Catalog Service, and Web Map Content.

In addition, the OWG has adopted the ISO 15926 2000 profile of the National Intelligent Transportation System Standard (NITS), ISO 15926 2000 geospatial metadata, as well as ISO 15926 2000 symbology sets.

NGA is a DOD combat support agency and a member of the National Intelligence Community. The Agency's mission is to provide timely, relevant and accurate geospatial intelligence in support of our national security. Headquarters is in Bethesda, Md. NGA has major facilities in the Washington, D.C., Northern Virginia and St. Louis, Mo., areas with NGA support teams worldwide.

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Address: <http://194.7.80.153/website/book.asp?menuid=15&vs=3&page=volume4%2Fch02s04%2Ehtml>

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Facts NC3TA Volumes Request for Changes Forum NOSWG

NC3TA Volumes
NC3 Board approved version 7 (unlabelled)

About the volumes
Download PDF of V4
V1 - NATO C3 Technical Architecture Management
V2 - Architectural Descriptions and Models
V2-S1 - Domain Architectures
V2-S2 - Emerging Technologies
V3 - Base Standards and Profiles
V4 - NC3 Common Standards Profile (NCSP)
PREFACE
1 - INTRODUCTION
2 - STANDARDS AND PROFILES PER SERVICE AREA
A - NCSP - MINIMUM INTEROPERABILITY PROFILE (NCSP-LITE)
V5 - NC3 Common Operating Environment (NCOE)
V5-S1 - Interface Definitions
V5-S2 - Service Descriptions
V5-S3 - Role of Ontologies in Transformation to NNET
Rationale - Rationale for the selection of NCSP Services and Standards
IHB - Implementation Handbook (NC3TA-IHB)

2.4. Data Interchange

2.4.1. Role of Data Interchange Services

41. Data interchange services provide support for the interchange of data between applications. These services are designed to handle interchange between applications on identical as well as on heterogeneous platforms. Each type of data - texts, documents, fax data, graphics, video/audio recordings and technical data - requires specific classes of services.

2.4.2. Testing Co-ordination Authority

42. The TCA for the commercial standards is the NOSWG. The TCA for Circuit Switched STANAGs is SC/6, for Tactical Data Links the SC/5 Data Link Working Group, for Tactical Message Data the SC/5 Message Text Format Working Group and for Geographical and Military Symbology standards the NOSWG

2.4.3. Requirements for Data Interchange Services:

43. Data interchange must be independent from platforms, systems and applications. To facilitate interoperability, the interchange technology should not require any configuration parameters, or at least as few as possible (e.g. in compressed transmission like MPEG).

44. Data interchange includes the following services:

- Graphics Data Interchange. Graphics Data Interchange Services shall provide support for device-independent description and encoding of picture elements for vector- and raster-based graphics. This also includes support for the transmission of computer generated or optically scanned engineering drawings and document pages.

<http://www.earthobservations.org/newsroom.html>

Group on Earth Observations

Newsroom

News | GEO in the News

The Group on Earth Observations (GEO) is leading a worldwide effort to build a Global Earth Observation System of Systems (GEOSS) over the next 10 years, as set forth in the [GEOSS 10-Year Implementation Plan](#).

Learn more about GEO.

For media inquiries, please contact GEO at +41 22 730 8505 or by e-mail at secretariat@geossec.org.

NEWS

14 September 2006
[Greenhouse gas bubbling from permafrost](#)

Using a combination of remote sensing, aerial surveys, and year-round in-situ measurements scientists followed trails of frozen methane bubbles and placed traps

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earthobservations.org/index.html

OGC®

Open Geospatial Consortium, Inc.

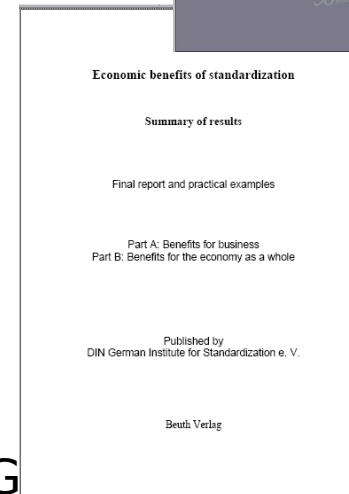
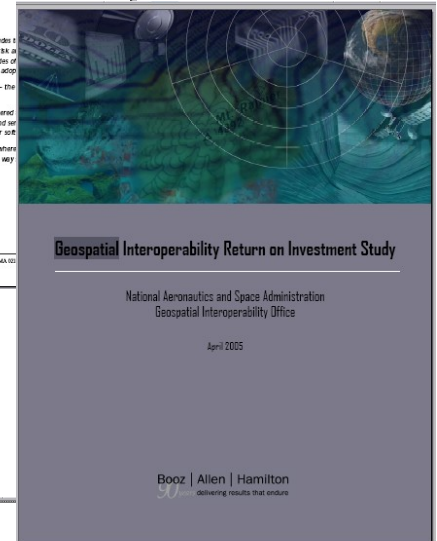
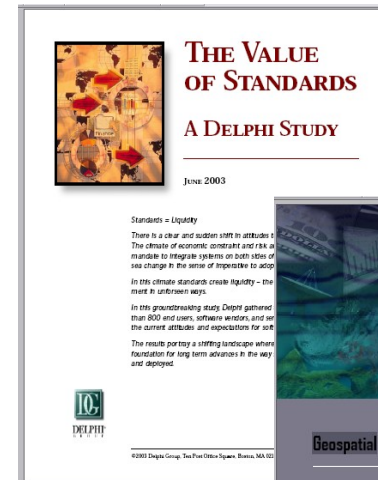
Helping the World to Communicate Geographically

Return on Investment



Multiple studies confirm the value and advantage of open standards based solutions:

- NASA Geospatial Interoperability: Return on Investment Study:
<http://gio.gsfc.nasa.gov/docs/ROI%20Study.pdf>
- Value of Standards, Delphi Report:
<http://www.delphigroup.com/research/whitepapers/20030728-standards.pdf>
- Economic Benefits of Standardization, DIN German Institute for Standardization:
<http://www.sis.se/upload/632248898159687500.pdf>



Some of our voting Members



- U.S. Government
 - National Geospatial-Intelligence Agency (NGA)
 - EPA
 - Census
 - NASA
 - USGS
 - DHS
 - Army TEC
 - GSA
 - NOAA
- Industry
 - Leica Geosystems
 - Google
 - Microsoft
 - Oracle
- Industry Continued
 - ESRI
 - Autodesk
 - Intergraph
 - Pitney Bowes Map Info
- Integrators
 - Lockheed Martin
 - BAE Systems
 - Northrop Grumman TASC
 - EADS Astrium
 - Seicorp
 - Boeing
 - Raytheon
 - SRA
 - SRS
 - Mitre

OASIS OGC Alliance Partnerships

A Critical Resource for Advancing Standards

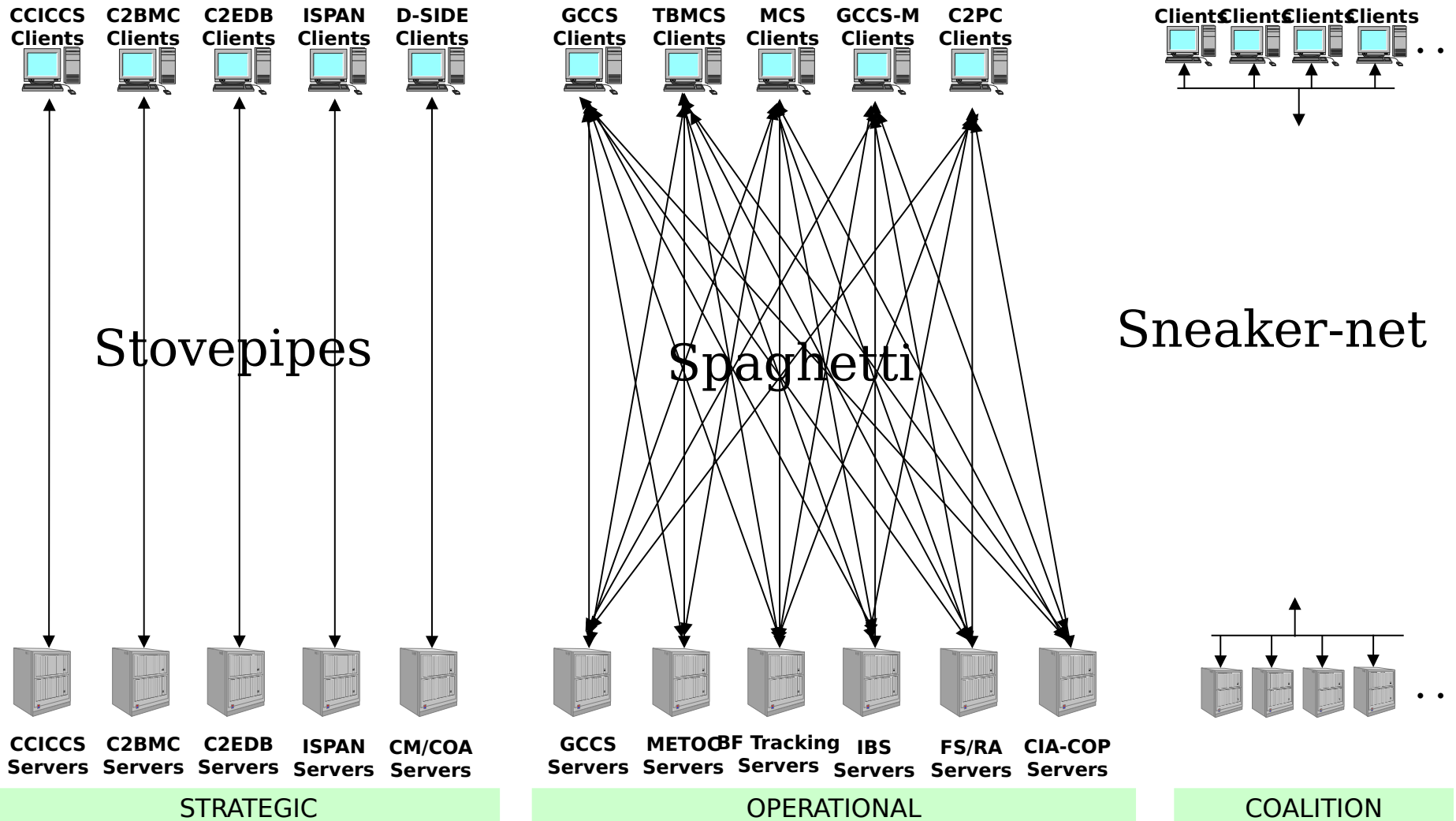


- World Wide Web Consortium (W3C)
- Internet Engineering Task Force (IETF)
- COMCARE
- Digital Geospatial Information Working Group (DGIWG)
- Global Spatial Data Infrastructure Association (GSDI)
- Group on Earth Observations
- International Organization for Standards (ISO) Technical Committee 211
- OASIS
- Object Management Group (OMG)
- Open Mobile Alliance (OMA)
- Open Grid Forum (OGF)
- Simulation Interoperability Standards Organization
- International Alliance for Interoperability (IAI)
- IEEE Geoscience & Remote Sensing Society
- IEEE Technical Committee 9 (Sensor Web)
- Taxonomic Data Working Group (TDWG)

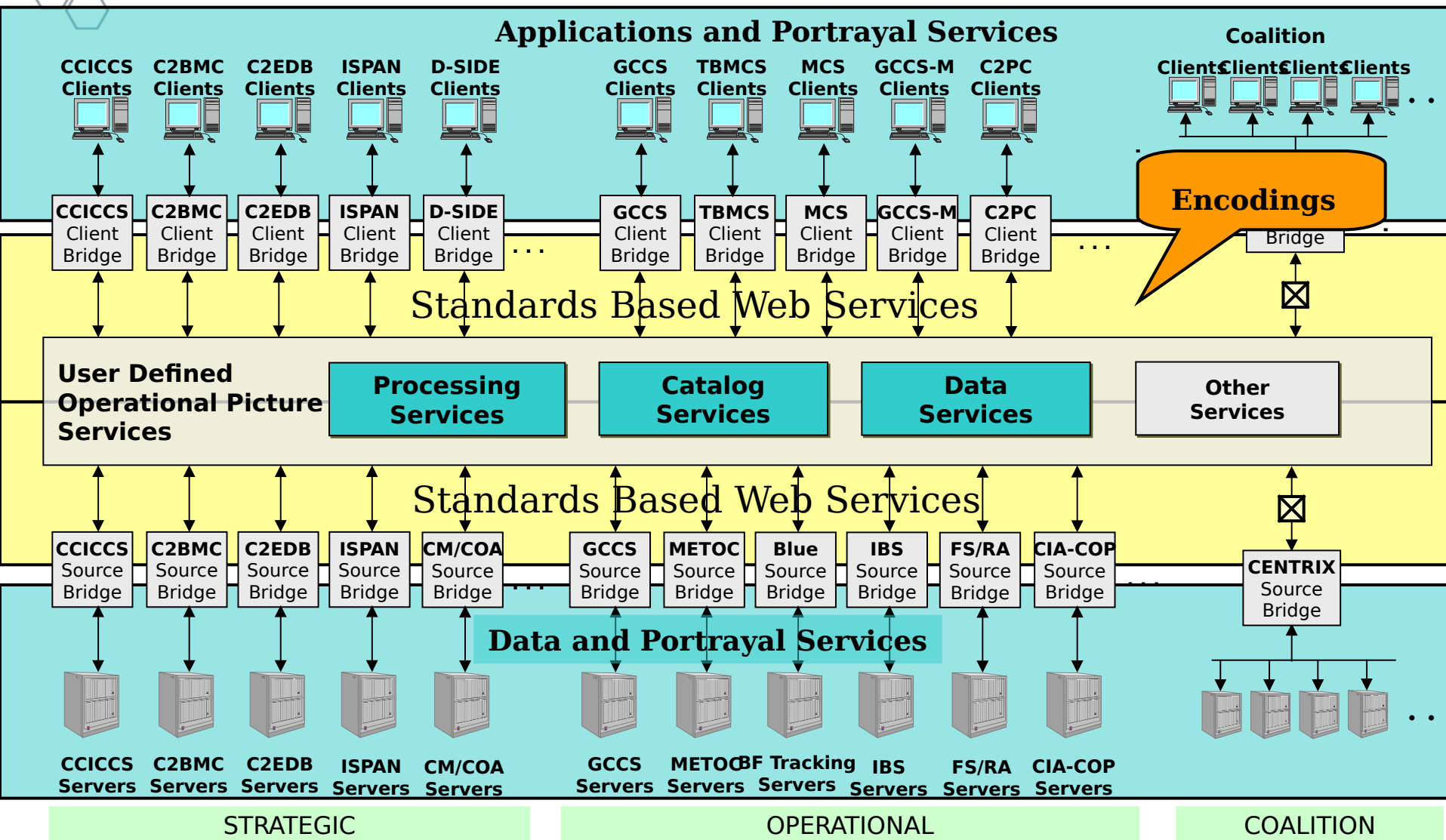


Focus on SOA Interoperability... From This

*Based on "DoD C2 Information Management Approach", courtesy of Mark Kuzma, DISA



To This - Net Centric Enterprise Services Perspective



OASIS OGC Alliance Partnerships

A Critical Resource for Advancing Standards



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2008 Initiatives Underway And In Planning

2008 Forecast – Initiative Summary



- Empire Challenge 08 Pilot
 - Multi-INT, Joint/Coalition DCGS interoperability demonstration
- AECOO Testbed
 - Develop a collaborative, joint relationship and capability between OGC and AEC standards organizations
 - Mature our capability to further advance AEC / Geospatial convergence and interoperability
- GEOSS Architecture Pilot
- Core Services Interoperability Pilot
 - In partnership with COMCARE Alliance, NASFM, NENA
 - Focus on authenticated and directed messaging, radio over IP for emergencies
 - OGC adds geospatial, sensor, and Open Location Services components for situational awareness

2008 Forecast – Initiative Summary



- OGC Web Services Phase 6 Testbed
 - Planning to commence in February 2008
 - Kick off in Summer 2008



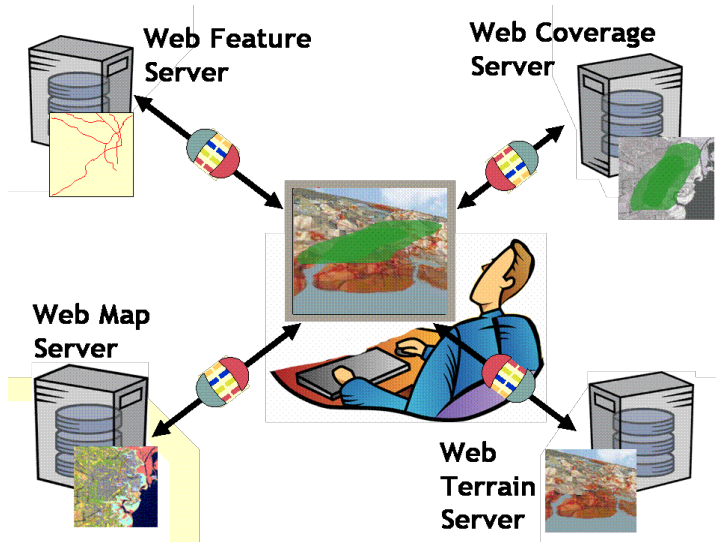
Three Work Areas

Open Web Services
Sensor Web Enablement
3D / CAD / GIS Integration

Open Web Services (OWS) (think classic geospatial)



Just as http:// is the dial tone of the World Wide Web, and html / xml are the standard encodings, **the spatial web** is enabled by OGC standards, such as...

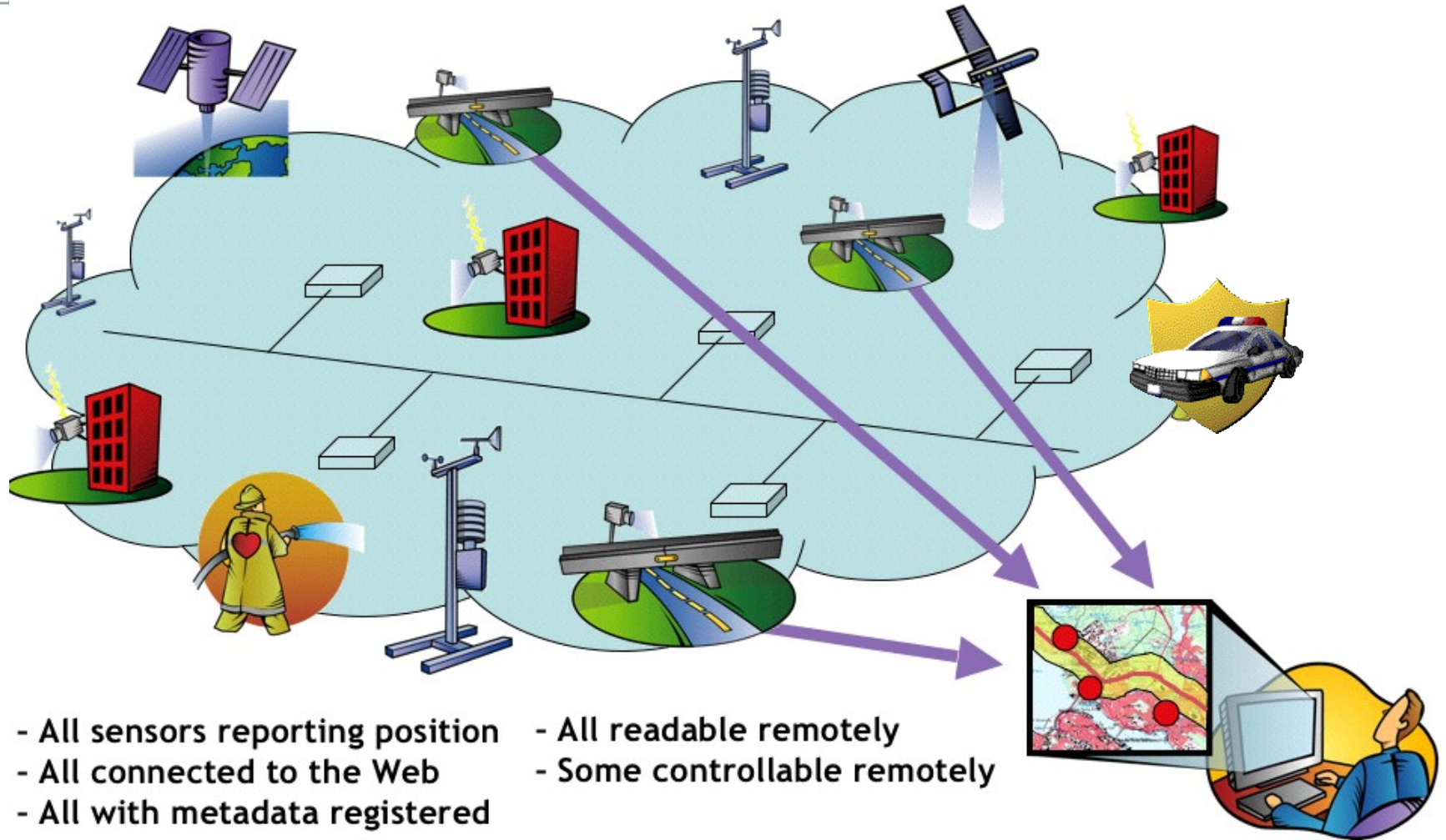


Web Map Service (OGC & ISO)
Style Layer Descriptor (OGC)
Feature Model & GML (OGC & ISO)
Web Feature Service (OGC)
Web Coverage Service (OGC)
Web Map Context (OGC)
Catalogue (OGC)
Metadata (ISO 19115 & OGC)
Web Processing Service (OGC)
Others...

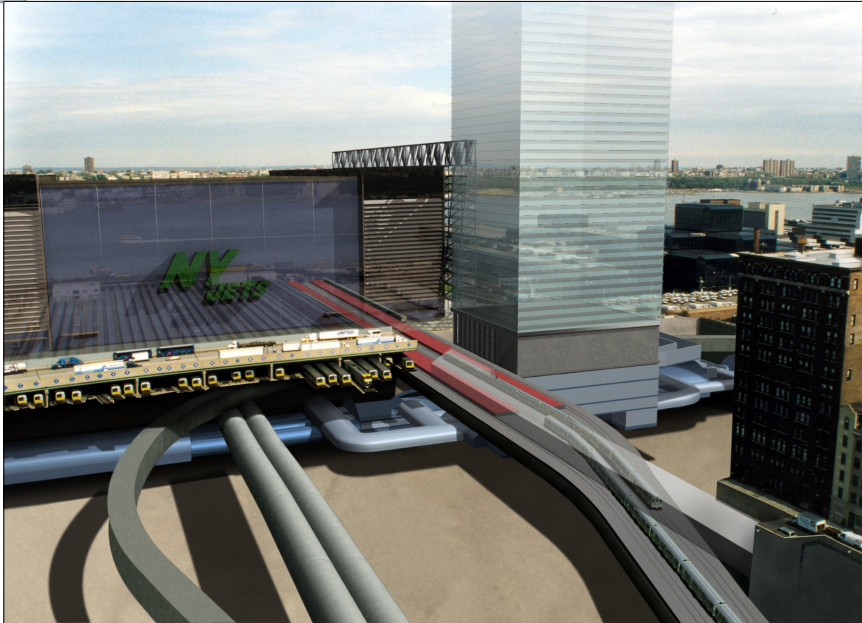
Data related to Critical Infrastructure, Emergency Management, Weather, Climate, Homeland Security, Defense & Intelligence, Oceans Science are geospatial can be managed through OGC web services in the enterprise.



Sensor Web Enablement (SWE) (think about live resources)



CADD GIS 3D Integration (think real time simulation)



Courtesy Parsons
Brinckerhoff



**Open Standards
approach to sharing of
information and
services between CAD
and geospatial
technologies**

**Critical for Urban
Planning, Emergency
Response, Homeland
Security, Defense and
Intelligence,
Maintenance,
Engineering**



Summary



- How many times have you considered quitting in frustration – we all have those moments – but resisted when you realized it is hard to change something from within, but impossible to do so from the outside looking in?
- NGA, NASA, EPA, NATO C3, others have accepted that changing the world requires active engagement in it
- Open geospatial standards would not be where they are today without the strong support and participation by NGA, Army TEC, NASA and other government organizations
- But, we could push the noodle further and faster with more participation